THE AMERICAN JOURNAL OF PHARMACY

PUBLISHED BY AUTHORITY OF THE

PHILADELPHIA COLLEGE OF PHARMACY.

EDITED BY

HENRY KRAEMER.

PUBLICATION COMMITTEE FOR 1904.

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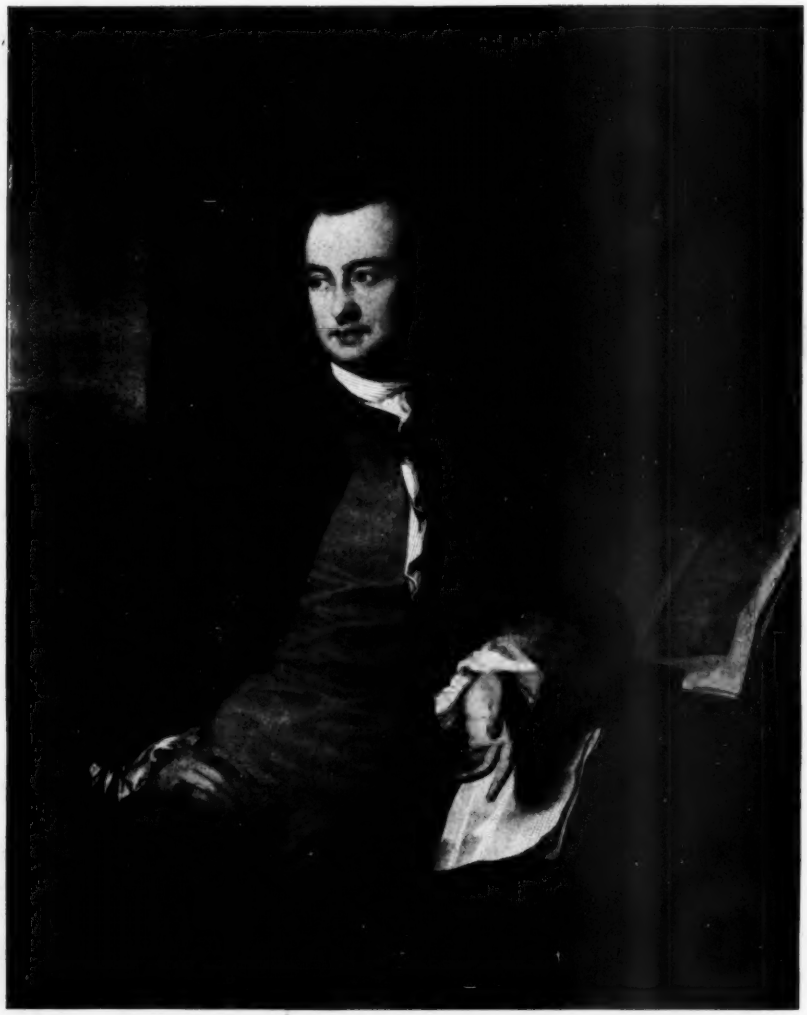
VOLUME 76

PHILADELPHIA:
1904.



DR. JOHN MORGAN.

(Reproduced from "The History of Medicine in the United States."
By Dr. Francis R. Packard.)

THE AMERICAN
JOURNAL OF PHARMACY

JANUARY, 1904.

JOHN MORGAN,

THE FOUNDER OF THE FIRST MEDICAL SCHOOL AND THE ORIGINATOR OF PHARMACY IN AMERICA.

By M. I. Wilbert,
Apothecary at the German Hospital, Philadelphia, Pa.

John Morgan, by far the most erudite and in many respects the most noble and interesting character in colonial medicine, contributed more than any one other individual to establish and to promote medical teaching, medical ethics and medical progress in America.

A simple enumeration of some of his claims to priority will bring to mind the nature and variety of his accomplishments. He was the founder of medical training, and was elected the first professor of medicine in a recognized chartered college. He was one of the founders of the first medical society in Philadelphia.

He was one of the founders of the American Philosophical Society. He was one of the founders of the College of Physicians of Philadelphia, was the first to suggest the necessity or use of such an institution, and among the first to donate books with a view of creating a library.

What is perhaps of more interest to us as pharmacists, however, is the fact that Dr. Morgan was the first, and for many years the only, practitioner in America to suggest and follow the practice of writing prescriptions, and having his medicines dispensed by a qualified apothecary.

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To more thoroughly appreciate the untoward conditions under which Dr. Morgan attempted to introduce this latter, and, at the time, unpopular innovation, we must take a short retrospect of the conditions as they existed in the early half of the eighteenth century, when Morgan first entered as a medical apprentice. The active, outdoor life of the early colonists made them an exasperatingly healthy class of people, but even when ill the advice of a physician was only sought after the whole gamut of household remedies had been tried and failed. Physicians were not numerous, and druggists were few indeed.

Watson, in his "Annals of Philadelphia," mentions but six drug stores existing in Philadelphia about 1750, the few that were not owned by physicians were devoted exclusively to supplying medicines and medicinal preparations to physicians, and to the sale of such household remedies as the housewife could not gather herself in the fields or cultivate in her own garden.

Physicians invariably dispensed their own medicines, and these were usually prepared by the apprentice or apprentices of that day. These apprentices, by running errands, gathering herbs, preparing and dispensing medicines and attending to other and at times even menial duties about the house of their master, were expected, in the course of the six or seven years of their apprenticeship, to absorb sufficient knowledge of physic to open a shop and practice for themselves.

Dr. Francis R. Packard, in his "History of Medicine in the United States," refers to the life of these early medical apprentices, and quotes from the life of Dr. John Bard, one of the more famous of the colonial medical men, who in speaking of his preceptor says: "He treated his pupils with great rigor and subjected them to the most menial employments."

It was into conditions such as these that John Morgan was born in 1735. His father, Evan Morgan, was a native of Wales and came to Philadelphia at an early date, where he engaged in mercantile pursuits, and is said to have been quite successful.

From letters written by Benjamin Franklin it appears that Evan Morgan was a friend and close neighbor of that celebrated printer, philosopher and statesman.

John Morgan, when still quite a lad, was placed at Nottingham School, Chester County. This school, at that time, was under the

direction of a Rev. Mr. Finley, and had a high reputation throughout the middle colonies for its thorough instruction in Latin and Greek.

After the founding of the College of Philadelphia, Morgan was transferred to the latter institution, and about the same time was apprenticed to Dr. John Redman, one of the most successful as well as one of the most popular of the early physicians of Philadelphia.

In this double capacity of student and apprentice Morgan continued until 1757, when he graduated from the College of Philadelphia, being one of the class of seven, the first to receive a collegiate degree in Philadelphia.

It was during this same period of his apprenticeship that John Morgan served as apothecary to the Pennsylvania Hospital. Dr. Redman, his preceptor, was at that time one of the physicians to the hospital, and it was at his suggestion that Morgan was appointed to fill the vacancy that had occurred on the resignation of Jonathan Roberts, the first apothecary.

After serving thirteen months as apothecary in the hospital, Morgan resigned, May 1, 1756, and was succeeded by John Bond, a nephew of Dr. Thomas Bond, another one of the physicians and also one of the founders of the Pennsylvania Hospital.

After graduating from the College of Philadelphia and completing his term of apprenticeship with Dr. Redman, Morgan enlisted as lieutenant and surgeon, with the provincial troops in their campaign during the French War.

From his own statements, as well as from contemporary reports, it appears that it was in the capacity of surgeon that Morgan was chiefly engaged. His fellow-apprentice, lifelong friend and biographer, Dr. Benjamin Rush, in speaking of this period, lauds Morgan very highly for his diligence and humanity in attending the sick and wounded, and intimates that Morgan, even at that time, possessed considerable skill as a physician and surgeon.

Morgan left the army in 1760, and on the advice of his former preceptor and other friends, went to Europe to perfect himself in his profession.

Through the personal friendship of Benjamin Franklin, then a resident in London as the agent for the Province of Pennsylvania, he was introduced to a number of the prominent medical men and scientists in the English metropolis. He thus had an opportunity

of improving himself under the most celebrated medical teachers of that time. In London he studied under Hewson and Fothergill, and also attended the lectures and dissections of Drs. John and William Hunter.

From London he went to Edinburgh, well supplied with letters of introduction from Franklin to the leading men of the University. Among these letters was one to the celebrated Dr. Cullen, who had succeeded Dr. Plummer in the chair of chemistry.

Dr. Cullen received Morgan most kindly and became one of his staunchest patrons and friends.

After attending lectures at Edinburgh for two years, Morgan presented a thesis in Latin, on the formation of pus, and was granted the degree of M. D. by the University in 1763; some time after this, and before coming to America, he was also admitted as a licentiate of the College of Physicians of Edinburgh. From Edinburgh, Morgan went to Paris, where he spent the greater part of the winter in the study of anatomy, attending chiefly the dissections of M. Sue.

A memoir on the art of making anatomical preparations by corrosion, in which art he had, under the instruction of Dr. Hunter, become very proficient, secured for him admission to the Royal Academy of Surgery, as a corresponding member.

From Paris he took a trip through Italy. In Padua he paid his respects to the celebrated Morgagni, who, then eighty-two years of age, received him with great politeness and showed him many kindnesses. From Morgan's own account of this visit, it would appear that Morgagni was greatly impressed with the dexterity Morgan had developed in making anatomical preparations, and complimented him very highly on his proficiency in this direction.

Exactly where Morgan first evolved his plan of medical education, in connection with an established academy or college, does not appear in evidence; it was, however, some time after Dr. Shippen, Jr., had left for home. From the letter of recommendation sent by Dr. John Fothergill, with Wm. Shippen, Jr., it would appear that there had been some understanding to open private courses of lectures, probably at the suggestion of Dr. Fothergill, who had taken a deep interest in medical matters in the American colonies, and particularly in the province of Pennsylvania.

It is probable that it was not until Morgan arrived in Paris that his plans for medical education were fully matured. Once having

settled on a definite plan Morgan left no possible chance of improving or securing it escape him. It was in Paris that he wrote and

A

DISCOURSE

UPON THE INSTITUTION OF

MEDICAL SCHOOLS

IN AMERICA;

Delivered at a Public ANNIVERSARY COMMENCEMENT, held in the COLLEGE of PHILADELPHIA *May* 30 and 31, 1765.

WITH A

PREFACE

Containing, amongſt other things,

THE AUTHOR's

APOLOGY,

For attempting to introduce the regular mode of practiſing PHYSIC in PHILADELPHIA:

BY JOHN MORGAN M.D.

Fellow of the Royal Society at LONDON; Correſpondent of the Royal Academy of Surgery at PARIS; Member of the Arcadian *Belles Lettres* Society at ROME; Licentiate of the Royal Colleges of Phyſicians in LONDON and in EDINBURGH; and Profeſſor of the Theory and Practice of Medicine in the College of PHILADELPHIA.

PHILADELPHIA:

Printed and ſold by WILLIAM BRADFORD at the Corner of *Market* and *Front-Streets*, MDCC,LXV.

Facsimile of Title-page of Morgan's Discourse.

elaborated on his discourse on the Institution of Medical Schools in America; it was also from Paris that the friends of the College of

Philadelphia, as well as his personal friends were first broached or consulted as to the feasibility or desirability of such an innovation.

On his return to London Morgan visited a number of the friends of the institution and secured from them letters of commendation for his plan of medical instruction.

Soon after his arrival in Philadelphia he proposed his plan for connecting a medical school with the College of Philadelphia to the Board of Trustees and also intimated that he was desirous of being appointed professor of the theory and practice of medicine. The project, ably presented and liberally endorsed by the Proprietor of the Province and other friends of the institution abroad, was unanimously adopted, and on the third day of May, 1765, John Morgan was duly appointed Professor of the Theory and Practice of Physic in the College of Philadelphia, the first chair of medicine in a regular chartered college in America.

At the succeeding commencement, on May 30th and 31st of the same year, Dr. Morgan delivered his discourse or defence of his proposed plan of education before a representative gathering of medical men, the members of the Board of Trustees and other friends of the institution.

This discourse, while it elicited commendation in some directions, was severely criticised in others. Morgan was accused of trying to transplant into a new country, ideas that were only suited to Continental practice and not at all adapted or adaptable to conditions in America.

The stand taken by Morgan at that time was, it is true, a revolutionary one from the point of view of the then medical practitioners. For Morgan, on the other hand, it was essential to be consistent with his training and his accomplishments.

To digress for a moment, it is unfortunate indeed that this little pamphlet, the first and one of the most valuable of American medical classics, is not more available at the present time, as much of the contained material would be well worth bringing to the attention of medical students and medical practitioners of the present time.

Much of the credit for the high ethical stand taken by this first Professor of Medicine is no doubt due to Benjamin Franklin, whose letters of introduction secured for Morgan the friendship and patronage of men at the very head of their profession in Europe. The advantage, in a professional way, of not dispensing medicines, was

no doubt impressed on him during his travels on the Continent, although as a Licentiate of the College of Physicians of Edinburgh he would have been expected to abide by the adopted rules or code of ethics. This college had, as early as 1754, adopted an Act that prohibited their Fellows and Licentiates from taking upon themselves to use the employment of an apothecary, or to have or to keep an apothecary shop.

How thoroughly he was imbued with the expediency of his plan is well illustrated by his "Discourse," while the title-page of this dissertation, as published, indicates the opposition that his remarks met with at the very start.

To give an accurate idea of the earnestness with which Morgan pleaded his case we cannot do better than quote some of the arguments as he presented them. In speaking of the desirability of separating the several branches of the practice of medicine he says:

"We must regret that the very different employment of physician, surgeon and apothecary should be promiscuously followed by any one man. They certainly require very different talents.

"The business of pharmacy is essentially different from either, free from the cares of both, the apothecary is to prepare and compound medicines as the physician shall direct. Altogether engaged in this by length of time he attains to that skill therein which he could never have arrived at were his attention distracted by a great variety of other subjects.

"The wisdom of ages approved by experience, the most certain test of knowledge, has taught us the necessity and utility of appointing different persons for these different employments, and accordingly we find them prosecuted separately in every wise and polished country.

"The paying of a physician for attendance and the apothecary for his medicines apart, is certainly the most eligible mode of practice both to the patient and practitioner. The apothecary, then, who is not obliged to spend his time in visiting patients, can afford to make up medicines at a reasonable price, and it is as desirable as just in itself that patients should allow fees for attendance—whatever it may be thought to deserve.

"They ought to know what it is they really pay for their medicine and what for medical advice and attendance."

Morgan's plan of confining himself exclusively to the practice of medicine did not meet with the approval of his contemporaries, even such of them as had attained a medical degree abroad.

It was not until 1774 that he had even a single follower. This first physician to adopt Dr. Morgan's plan of writing prescriptions for his patients deserves more than passing notice, as he was one of the most interesting and picturesque of the historical characters of the revolutionary period in Philadelphia.

Dr. Abraham Chovet, was a native of England, where he is said to have been a demonstrator of anatomy for a number of years. He lived for a time in Barbadoes and later in the island of Jamaica,

DR. ABRAHAM CHOVET.
Reproduced from "The History of Medicine in the United States."
By Dr. Francis R. Packard.

The history of this picture is rather an interesting one. The original is a wax medallion, now the property of the Pennsylvania Hospital. The picture was first published in Norris's "Early History of Medicine in Philadelphia," where it is stated that the original was made on May 25, 1784, Dr. Chovet's eightieth birthday, by his servant, Dr. Eckhout. Some time after Dr. Chovet's death his daughter, Susannah Maria Penelope Abingdon, gave the medallion to Christopher Marshall, one of the Fighting Quakers and an early Philadelphia druggist; he, in turn, appears to have willed it to his son Charles Marshall, the first president of the Philadelphia College of Pharmacy, who, on his death, left it to his eldest daughter, Elizabeth Marshall, the first woman pharmacist in America; she, in turn, left it to her younger sister Mary Ann Marshall, and she on December 25, 1877, presented the medallion to the Pennsylvania Hospital, where it is treasured among the historic relics that have been gathered together, from time to time, in that, *itself*, historic institution.

from the latter place he came to Philadelphia about 1774, being then a man well advanced in years.

The doctor was an eccentric but extremely original character. He appears to have been a man well known about town and is mentioned more frequently, perhaps, in the local histories and memoirs of the revolutionary period than any of his contemporaries.

Christopher Marshall in his "Remembrancer," has several anecdotes relating to him, and also describes his lectures on anatomy, which were held in a building in Vidall's Court. This building was referred to by Mr. Evan T. Ellis in his "Story of a Very Old Philadelphia Drug Store" (A. J. P., 1903, page 57).

Dr. Chovet died March 24, 1790, in his 86th year. He was buried in Christ Church, his dying request being that he might have a plain funeral, and that no bells be tolled on the occasion, as he did not wish to disturb sick people by such unnecessary noise. One characteristic saying of his, that might well be quoted here, was "That physician was an imposter that did not live until he was eighty."

Despite the fact that Dr. Chovet was over seventy years of age when he came to Philadelphia, did not dispense medicines, and was, in addition, a notorious Tory, he soon had one of the most desirable practices in the city.

The second medical practitioner to follow Morgan's example was John Jones, a native of Long Island, who had received a portion of his medical education in Philadelphia.

Jones is usually spoken of as having been an apprentice to Thomas Cadwalader, the first physician to give demonstrations and lectures on anatomy. Dr. Norris in his "Early History of Medicine in Philadelphia," also refers to John Jones as having been a pupil of Lloyd Zachary, whom Jones himself is said to have described as "a person whose whole life has been one continuous scene of benevolence and humanity."

After visiting Europe, Dr. Jones settled in New York, where he devoted himself particularly to the practice of surgery. He was the first professor of surgery in the New York Medical School, and subsequently published what is probably the first comprehensive surgical work written in this country, "Plain Remarks on Wounds and Fractures;" this is said to have been published first about 1765 Editions of it are known to have been published in 1775, 1776 and 1795.

Jones removed to Philadelphia in 1779, and in the following year he was elected as one of the surgeons of the Pennsylvania Hospital. On inquiry, he was so much impressed with the advantages of Dr. Morgan's plan of writing prescriptions that he decided to follow his example.

Dr. George W. Norris in his "Early History of Medicine in Philadelphia," says that these three men, Morgan, Chovet and Jones, were the first to adhere closely to the practice of writing prescriptions. They rapidly came into public esteem, and, other physicians seeing the manifest advantages enjoyed by these men, soon fell into the same practice. Once in vogue, the custom spread rapidly, so that by the end of the eighteenth century the writing of prescriptions was quite a common practice in all of the larger cities of the United States.

The story of the founding of the first medical school in America might well be repeated here, particularly as in all popular accounts Dr. Morgan is not given the credit that is rightfully due him. It is true that Norris, Ruschenberger and Packard give Morgan due credit. Many other writers, however, content themselves by quoting the statement made by Rush, in his introductory lecture, November 2, 1789, in which he said, "It was during his absence from home that he concerted with Dr. Shippen the plan of establishing a medical school in this city."

It is true that Dr. Shippen on his return from England opened a course of lectures on anatomy, and continued the same for at least three years. This plan of private lectures appears to have been inaugurated at the suggestion of the celebrated Dr. John Fothergill, who, as noted before, had always taken a deep interest in all matters relating to the advancement of the practice of medicine in the American Colonies. But even in this venture, Shippen could not claim to have really been the first. As early as 1752, William Hunter, a native of Scotland, and a pupil of the elder Monro, settled in Rhode Island and gave lectures on anatomy and comparative anatomy at Newport, in 1754, 1755 and 1756.

Thomas Cadwalader, as early as 1742, made dissections and gave demonstrations for the benefit of his contemporaries who had not had an opportunity of going abroad. There is also a record that sometime before 1647, Giles Firmin "made an anatomy and read on it very well" in Boston.

Dr. Morgan in his first communication to the Board of Trustees of the College of Philadelphia, and also in his discourse, awards full credit to all previous lecturers, and, in referring to his plan of establishing a school of medicine in connection with the college, says: "What led me to it, was the obvious utility that would attend it, and the desire I had of presenting, as a tribute of gratitude to my alma mater, a full and enlarged plan for the institution of medicine in all its branches in this seminary, where I had part of my education, being among the first sons who shared its public honors. I was further induced to it from a consideration that private schemes of propagating knowledge are unstable in their nature, and the cultivation of useful learning can only be effectually promoted under those who are patrons of science, and under the authority and direction of men incorporated for the improvement of literature."

In speaking of the necessary professorship of anatomy, Dr. Morgan says: "Dr. Shippen having been concerned already in teaching that branch of medical science is a circumstance favorable to our wishes, few here can be ignorant of the great opportunity he has had abroad for qualifying himself in anatomy, and that he has already given three courses in this city, and designs to enter upon a fourth course next winter."

Shippen subsequently applied for, and was given, the chair of anatomy and surgery in the College of Philadelphia.

Dr. Morgan was undoubtedly the first teacher of the theory and practice of medicine, materia medica, pharmacy and pharmaceutical chemistry in America. That he taught all of these branches appears from the announcement of the first course of lectures in the College of Philadelphia, quoted from the *Pennsylvania Gazette* for September 26, 1765.

A course of lectures on Materia Medica, by John Morgan, M.D., etc. Price four pistoles.

The course will commence on the 18th day of November, and will be given three times a week at the college, at three o'clock in the afternoon, till finished, which will last between three and four months.

To render these lectures as instructive as possible to students of physic, the Doctor proposes, in the course of them, to give some useful observations in general, and the proper manner of conducting the study of physic.

The authors to be read in the materia medica will be pointed out. The various substances made use of in medicine will be reduced under classes suited to the principal indications in the cure of diseases. Similar virtues in different plants, and their comparative powers will be treated of and an inquiry made

into the different methods which have been used in discovering the qualities of medicines, the virtues of the more efficacious will be particularly insisted upon; the manner of preparing and combining them will be shown by some instructive lessons upon pharmaceutic chemistry and pharmacy. To prepare them more effectually for understanding the art of prescribing with elegance and propriety, if time allows, it is proposed to include in this course some critical lectures upon the chief preparations contained in the Dispensatories of the Royal College at London and Edinburgh. The whole will be illustrated by many useful and practical observations on diseases, diet and medicines.

This rather comprehensive announcement was followed in 1766 by another, which read in part:

A course of lectures on the "Theory and Practice of Physic" will be delivered for the benefit of Medical Students, with a preparatory course on Botany, Chemistry and the Materia Medica, being the substance of a set of lectures delivered to his pupils last winter.

That Morgan had been the acknowledged teacher of chemistry in the medical school of the College of Philadelphia would also appear from the following letter, written by Dr. Rush, as an application for the chair of chemistry.

GENTLEMEN:—As the professorship of chemistry which Dr. Morgan has sometime supplied is vacant, I beg to offer myself as a candidate for it.

Should you think proper to honor me with the chair, you may depend upon my doing anything that lies within my power to discharge the duties of a professor, and to promote the reputation and interests of your college.

I have the honor to be, with the greatest respect,

Your most obedient humble servant,

BENJ. RUSH.

Philadelphia, July 31, 1769.

Dr. Morgan was one of the founders of the first medical society in the Province. This was the "Philadelphia Medical Society," organized February 4, 1765. Several years later this society was united with the "American Society for Promoting Useful Knowledge," and this, in 1769, was united with the Philosophical Society to form the well-known "American Philosophical Society held at Philadelphia for promoting useful knowledge."

The Philadelphia Medical Society included the names of a number of the leading medical men of Philadelphia, among them John Morgan, J. Kearsley, Jr., Gerardus Clarkson, Thomas Cadwalader, James A. Bayard, Robert Harris, George Glentworth, John Redman and Benjamin Rush.

These members continued a semblance, at least, of their organiza-

tion under the new titles, first as the Medical Committee of the American Society for Promoting Useful Knowledge, and later as the Committee on Medicine and Anatomy of the Philosophical Society.

Dr. Morgan, as early as 1767, suggested the feasibility of forming a College of Physicians. The proposition did not meet with the sanction of the proprietor, Thomas Penn, who in a letter to his brother, Richard Penn, dated February 27, 1767, said: "I think it very early for such an establishment, and wish the faculty would not press for such a thing. I shall confer with Dr. Fothergill upon it." The resulting conference does not appear to have resulted favorably, as nothing more was heard of the project for the time.

Dr. Morgan was married on September 4, 1765, to Mary, daughter of Hon. Thomas and Mary (Johnson) Hopkinson. In 1773 he visited Jamaica to obtain donations for the department of general literature in the College of Philadelphia. In the same year he was elected to serve on the staff of the Pennsylvania Hospital, in which capacity he served until 1777; he was re-elected in 1778 and served to 1783, when he resigned.

His first resignation from the hospital was due to his discharge from the medical service of the Continental Army.

In 1775 he had been offered and accepted the office of Director-General and Physician-in-Chief of the American hospitals.

In this position he provoked the antagonism and jealousy of many of his subordinates, who, by false charges and political intrigues, forced his discharge in 1777. This dismissal was a severe blow to Dr. Morgan, and although he was subsequently acquitted of all charges by a committee appointed by the Continental Congress, he, for the time being, considered himself disgraced, and withdrew from all public offices.

January 2, 1787, is the recorded date of the first meeting of The College of Physicians of Philadelphia, twenty years after such an institution was first proposed by Dr. Morgan. Prominent among the first Fellows were the names of the then leading practitioners, Dr. Morgan, Dr. Chovet and Dr. Jones, while a number of the remaining senior fellows had also been members of the Philadelphia Medical Society.

Morgan did not long survive the inauguration of the College of Physicians. He died October 15, 1789, and was buried beside his wife in the middle aisle of St. Peter's Church, Philadelphia.

The prognostications made by Dr. Morgan, in his inaugural address, have long since been fully realized. The school that he founded has grown in strength and usefulness and its graduates, among them men of more than ordinary abilities, have done it and their profession honor. Other useful institutions have been established, and together they have striven to spread the light of knowledge to all portions of the country.

Realizing the success that has ultimately attended his efforts it is indeed more than passing strange that the one who contributed so much to the introduction and advancement of the higher ideals in medical practice, should never have received the honors that are justly due him. The school he founded and its alumni have never made an adequate recognition ot his efforts in their behalf, while pharmacists have never given him even a moiety of the recognition due him, for his independence and perseverance, in introducing the regular mode of practicing physic into America, despite the criticism and opposition of his contemporaries.

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HISTORY OF ECHINACEA ANGUSTIFOLIA.[1]

By John Uri Lloyd.

This drug, which has slowly wedged its way into attention, is persistently forcing itself into conspicuity. The probabilities are that in time to come, it will be ardently sought and widely used, for it is not one of the multitude that have flashed into sight, been artfully pushed, then investigated, found wanting, and next dropped out of sight and out of mind. It seems proper, then, that the history of this drug should be recorded in an authoritative way, where it can be referred to in time to come, and that this record is appropriate to the section on historical pharmacy of our association seems rational, and it also seems consistent that the record should be made in a familiar and discursive manner, rather than stiff and precise.

For sixteen years preceding 1885, Dr. H. C. F. Meyers, of Pawnee City, Neb., prepared a secret remedy, which he called "Meyers' Blood Purifier." He was an enthusiast in the belief that this remedy was a cure-all for any and all diseases dependent upon depraved blood. He was an empiricist, and commended his blood purifier without reserve in such affections as seemed in its sphere. In 1885 the Doctor conceived the idea of enlarging its field of usefulness, and at the same time profiting by the returns from his discovery. He, therefore, wrote to Prof. John King, of Cincinnati, and to myself, describing his blood purifier, stating that its value depended upon a Western plant unknown to medicine, and that he would like to introduce the remedy to physicians generally. He cited many cases where his remedy had effected cures of rattlesnake-bite, depraved blood affections, etc., etc., stating that "in more than six hundred cases this remedy has failed not once to cure. It is not a poison, the medicament acts on blood and nerve." (Extract from letter.)

[1] Read at the American Pharmaceutical Association, 1903, Historical Section. The specimens named in this paper are in hand of the Society Section.

The letter-head of Dr. Meyer heralded the remedy in conspicuous type, as follows:

Office of
H. C. F. MEYER, M.D.,
Manufacturer and Proprietor of
Meyer's Blood Purifier,
Pawnee City, Neb.

Professor King consulted me concerning the subject, the supposition being that, as usual, the preparation would be found either to contain some well-known drug or to be an exaggeration of statement. However, as was our custom with all others concerned in materia medica directions, we wrote Dr. Meyer to the effect that if his remedy was to be introduced to the medical profession through the eclectic school of medicine, according to the inexorable rule of our school, the botanical name of the drug would necessarily have to be made public. Neither of us could concern ourselves in the matter unless he was willing to do this. Dr. Meyer then forwarded Dr. King and myself specimens of the root, which to me was new. (See specimen "A" herewith of original root.) On May 26, 1886. I wrote him that I could not from that root fragment determine the matter, and that he would have to supply me with a botanical specimen of the plant. Under date of June 7, 1886, through McCullah & Graham, druggists, Pawnee City, Neb., he sent me a box of the root, which, however, naturally, did not give me the opportunity to classify the plant. On writing him to this effect, he next, September 28, 1886, mailed me the whole plant, which Mr. C. G. Lloyd identified as Echinacea angustifolia, or the "nigger head" of the West. (See specimen "B.") Owing to the close relationship between this plant and the well-known Echinacea purpureum, or "black Sampson," long used in domestic medicine and familiar to eclectics and herbalists, I did not seriously consider the drug as one promising to fulfil Dr. Meyer's anticipations. However, Dr. King, with his usual thoughtfulness, consideration and care, proposed to investigate the matter, and, from the drug forwarded me by Dr. Meyer I at once made for Dr. King several specimens of liquid preparations, and then I passed the subject from mind as one among a multitude of such before me, destined to remain in obscurity.

After some months, Professor King informed me that he was very favorably impressed with the action of the preparations made for him,

and advised that the remedy be placed in the hands of other physicians of experience in whom he had confidence, and to whom he wrote. Accordingly, I placed the preparation that Dr. King preferred in the hands of Prof. I. J. M. Goss, M.D., of Atlanta, Ga., Prof. H. T. Webster, M.D., of Oakland, Cal., and others, who investigated the remedy after the suggestions of Dr. Meyer and Professor King, and, if I mistake not, Dr. Meyer also corresponded with these gentlemen.

Two years after the beginning of the investigation, Professor King, in the 1887 *Eclectic Medical Journal*, page 209, wrote an article on the therapy of the drug Echinacea, which was the first published reference thereto, and this was followed by an article by Professor Goss. When Professor Webster's work on "Dynamical Therapeutics" appeared, he gave Echinacea considerable conspicuity, which was the first authentic attention received by this plant in a book under covers. These works by professional men of distinction, led to attention from eclectic physicians, their contributions to eclectic literature becoming frequent. From this date, the name and claims and uses of the remedy crept gradually outside of our school.

In 1893, Mr. C. G. Lloyd contributed to the *Eclectic Annual*, page 332, an article on the drug and its identification, for many persons were then confusing Echinacea purpureum with Echinacea angustifolia. All of this time, I was rather resisting the claims made by the enthusiastic friends of Echinacea angustifolia, believing that conservatism is to be preferred to over-enthusiasm, and yet one conspicuous object-lesson before me in its early history led me to be more tolerant in its behalf than otherwise I might have been. The wife of Professor King had long since been attacked by a cancer, and Professor King had tried every remedy that he could think of as a palliator, and at last turned to the preparations of Echinacea, which, as claimed by both Mrs. King and himself, gave her the only relief she had obtained. According to Professor King, it retarded the progress of the enemy as no other remedy had done. For years she had suffered with this cancer, and informed me herself that when Echinacea was not used she noticed an immediate change for the worse. To such an extent did she believe in the use of Echinacea that, on her account alone, before the remedy was known to others, I made it a duty to keep a constant supply on hand, and to the day of her death she could not do without Echinacea. That it palliated this individual case I had no doubt, and this personal instance, as I

have said, removed my prejudice and led me to a much greater toleration for other statements. And yet, the record of the overly famed Sarsaparilla, Stillingia, and such drugs, were ever in mind.

In this connection it may be stated that Dr. Meyer was so positive that Echinacea was a certain cure for the bites of poisonous insects and rabid animals as to lead him to desire to give the professions an exhibition of its power in that direction. For this purpose he proposed to come to Cincinnati, and, if we could not get a vicious rattlesnake in this locality, to bring a supply of serpents with him, and then, in the presence of selected medical authorities, permit these serpents to bite him freely, when they were in unquestionable condition, and then to counteract the poison by the use of Echinacea, internally and externally. He urged that this be done, which course, however, Professor King and myself positively refused to sanction. Dr. Meyer, however, claimed that he had been bitten repeatedly, and that there was no danger.

From the dates given, the drug Echinacea gradually crept into notice, and now, after nearly twenty years have passed since the inves igations were instituted, the drug is becoming conspicuous with the profession, and I will add that, in my opinion, it is destined to become more so.

Owing to the resemblance of the flower heads of Echinacea angustifolia, "nigger head," to Echinacea purpureum, "black Sampson," and also to several species of plants related to the sunflower family, this drug is now, as found upon the market, of very uncertain quality. I have known the root of a plant not related to it, thrown upon the market under the name Echinacea angustifolia, in large quantities, from sections of the country where Echinacea does not grow. Large amounts of so-called Echinacea have been sold in commerce, differing in every way from the true drug, which grows in great abundance throughout Kansas, Oklahoma, Nebraska, and other sections of the West and Southwest. Large amounts of Eryngium aquaticum have been dug and sold as Echinacea. The root may be superficially described as follows, as contributed by me to the *Eclectic Medical Journal* for August, 1897, to which I will add that no attempt is made in this description other than to point to some of its conspicuous characters:

Characteristics.—Echinacea root has a brown or brown-red color. It is much wrinkled longitudinally, and the folds of the shrunken

epidermis sometimes twist about the root in spiral form. When sliced transversely, the yellowish medullary rays are seen to be separated from each other by a greenish pulp, and when the dried root is broken, the fracture always presents the appearance of having been afflicted with dry rot. Upon chewing the root of prime Echinacea, a sweetish taste first presents itself, which upon prolonged chewing becomes acrid and tingling, which remains long to affect the tongue. This sensation reminds one of aconite, but it is devoid of the benumbing quality of aconite, and, unlike aconite, it increases the flow of saliva, instead of inducing dryness of the tongue. Indeed, in its early record, more than one physician inferred from the similarity of the taste, that by mistake aconite had been sold under the Echinacea label and wrote me concerning the subject. In early experience with the drug, I found insipid, tasteless lots of the genuine plant, that proved worthless in medicine. These specimens all came from low, wet lands east of the Mississippi River, for the plant is not confined exclusively to the West, and varies much in quality.

Echinacea contains minute amounts of a colorless alkaloid, which, however, does not constitute the therapeutical qualities of the drug. It contains much sugar, and large amounts of coloring matters, which prove injurious if allowed to remain in its preparations. The sensible constituent is a colorless, organic substance of acid reaction, which imparts the sensible properties to the drug, being intensely acrid and persistent—distressingly so in a pure condition. It exists in prime Echinacea in minute amounts, less than ½ of 1 per cent., and is probably in itself a mixture.

Accompanying, please find specimens of the plant and root of Echinacea, being the original drug, as sent me direct from the hands of its discoverer, Dr. Meyer.

GARDENS OF MEDICINAL PLANTS.

By Albert Schneider.

I. PREFATORY.

A paper on this subject cannot be made retrospective nor in the form of a review, since with a few exceptions there are no extensive gardens or parks entirely devoted to the cultivation of medicinal plants. The present object is rather to give a few suggestions as to

the significance and value of such gardens to the progress of pharmacy and medicine, and how such gardens may be established in the United States. On careful consideration it becomes evident that gardens devoted to the cultivation of medicinal plants are the direct outcome of the development and evolution of botanical gardens in general. It is true that many medicinal plants are cultivated on a large scale, but such plantations are not true gardens of medicinal plants any more than are agricultural fields botanical gardens in the ordinary acceptance of that term. The following very briefly condensed historical review will give some idea of the very recent origin of gardens of medicinal plants, and will furthermore serve to explain more fully the plan to be proposed.

II. HISTORICAL.

Botanic gardens date back to remote antiquity. We are justified in mentioning the gardens of tradition and myth to show that the mythical idealization is intimately associated with realization. The Jewish "Gan-eden," or Paradise, was supposed to have been situated in Persia or Armenia, and according to others in Chaldea. The gardens of Hesperides (tree or fruit gardens) were supposed to have been in Africa, near Mt. Atlas. There are the promised gardens of Mohamet, the gardens of Laërtes, and the gardens of Alcinoüs so fully described in Homer's Odyssey. These gardens of the imagination simply show that the human mind has ever associated joy, happiness, and pleasure with luxuriant vegetation.

Coming now to gardens of tradition which perhaps had some foundation in fact, we may first of all mention the royal gardens of the ancient Egyptians, which were of remarkable splendor. They were established on a grand scale about palaces, but were characterized by a paucity of species, consisting largely of palms and a few fruit trees and culinary vegetables. The country about the Egyptian catacombs was also converted into gardens. The Babylonian or Assyrian gardens (about 2000 years B.C.), though their existence is purely problematical, were described as magnificent, and were reckoned among the wonders of the world. They were built on elevated structures, supported by enormous pillars. The garden patches were laid out in squares with remarkably constructed terraces. Fountains kept the air cool and watered the plants. Equally wonderful and problematical were King Solomon's gardens and the earlier Persian and Grecian gardens.

The earliest comparatively authentic records of botanic gardens are those of the Romans. The first described is that of Tarquinius Superbus (534 B. C.), adjoining the royal palace at Rome. Among other plants, roses, poppies, lilies, peaches, apricots and cherries were cultivated. The villas of Cicero at Arpinum, of Sallust on the Quirinal hill, and those of Nero were noted for their beauty. In addition to these private gardens of the nobility there were also gardens established about temples, places of worship, and burial places which may be compared to the public parks and cemeteries of to-day. The term *hortus* as defined in the laws of the *decemviri* included a garden and country house. The garden devoted to kitchen plants was known as *hortus pinguis*. In spite of the fact that the larger Roman gardens were chiefly for pleasure and recreation, they contained many useful fruit trees, shrubs and herbs, besides flowers. Flowers were greatly prized and they figured very significantly at feasts, frequently enormous sums being expended for them. The following useful plants were introduced and grown: The fig and almond from Syria, the citron from Media, the peach from Persia, the pomegranate from Africa, the apricot from Epirus, apples, pears and plums from Armenia, cherries from Pontus. They cultivated sweet and sour apples, including a seedless variety; thirty-six varieties of pears, as early and late, large and small, hard and mellow; three varieties of quince; varieties of services and medlars; black, white and variegated plums; numerous varieties of cherries, several varieties of olives; they cultivated varieties of grapes—some were thick-skinned (*duracina*), others thin-skinned; one vine at Rome produced enough grapes to make 12 amphoræ (84 gallons) of wine. Some grapes were spherical, others oval or elongated. One was called *dactylides*, because the fruits were long like fingers. They cultivated figs, mulberries, and perhaps also raspberries and the brambleberry; further, hazelnuts, filberts, beech, mast, pistachias, walnuts (*Juglans*, from *Jovis glans*, the fruit of Jove), chestnuts, St. John's bread (Carob bean from *Ceratonia siliqua*), pines, gourd, cucumber, melons, cabbage, pea, bean, kidney bean, turnip, carrot, parsnips, skirret, radish, sorrel, asparagus, onions, garlic, endive, lettuce, succory, mustard, parsley, arache, alisander, dittander, elecampane, fennel, chervil and mushrooms. This catalogue gives some idea of the extent to which useful plants were cultivated, and what we of to-day owe to Roman influence and effort. There is no record, how-

ever, to show that the Romans made any attempt to arrange or group plants according to any definite system or to give the gardens any scientific rank. Useful and beautiful plants were introduced from other countries as they were found during war-like invasions. No special efforts were made to cultivate plants of medicinal value, excepting a few herbs in the vicinity of temples devoted to medicine, such as the temples dedicated to Esculapius.

Through Roman influence gardens were gradually established throughout Italy, centuries after the fall of Rome. Like the Roman villa gardens, most of these were private property. In fact, nearly all of the real gardens of antiquity were the pleasure grounds of opulent mortals. With the introduction of Christianity the polytheistic temple and sacred gardens were destroyed or neglected or sometimes continued as gardens of the monasteries; the gardens of burial grounds continued as before. The similarity between the Roman villa gardens and the later gardens of Italian baronial castles and gardens of the monastic establishments of the Middle Ages is very apparent. According to Castellan several monasteries were built on the ruins of Roman villas, copying the ancient grouping of buildings, structure of porticoes, terraces, arcades and the range of the gardens and pleasure grounds, etc.

From Italy the establishment of gardens spread northward and westward. There is a very close similarity between the Italian baronial castles and those of northern Europe and, as in the past, the private gardens of the nobility, as well as the more public parks and cemetery gardens were essentially for pleasure and recreation rather than utility.

The statements thus far made with regard to botanical gardens of antiquity apply not only to the countries referred to, but also largely to Asia, Arabia and India. Arabian and Chinese physicians have, however, for many centuries given some attention to the cultivation of medicinal plants, and the same may be said of Indian priests, though no very reliable data as regards the scope of such work are obtainable. Of the earlier European rulers there is only one, namely, Karl der Grosse (Charlemagne), who gave considerable attention to the introduction and cultivation of economic plants, including medicinal plants. The monks of the dark and later ages apparently had an eye to utility, and they gave some attention to the cultivation of medicinal plants. Heretofore the "herb-gatherers" relied almost

wholly on wild-growing species, but with the increased population and the cultivation of the soil, it became necessary to cultivate these plants and these earlier monastic gardens are really the progenitors of our modern gardens devoted to the cultivation of economic plants, especially gardens of medicinal plants.

Extensive public gardens, established on a scientific and far-reaching economic basis, are of comparatively recent origin. There were none worthy of note prior to the latter part of the sixteenth century. The first European public garden was established at Padua about 1533 or somewhat later (1545); in this garden considerable attention was given to the cultivation of "simples" (medicinal herbs). Shortly after these dates, other public gardens were rapidly established in different parts of Italy, notably the Palermo gardens and the botanic garden at Venice, which was formerly the monastic garden of San Giobbe.

The first extensive scientific and economic garden was the Jardin des Plantes of Paris, founded by Louis XIII in 1610 and put into active operation in 1634. La Brosse, the first director, remarked that during that period it had "eighteen years of persecution and six of culture." Under the direction of Thouin (during the first years of the consulship), this garden became firmly established as a school of botany and plant culture. Its objects were, first, to collect useful or remarkable plants from every part of the world and to distribute them to every part of France and so far as practicable to every other country, and, second, to form a school of botany, botanical research, and an experimental garden. A universal correspondence was established through which plants were secured from all over the world. Collectors were sent out at the expense of the government, and all material secured was conveyed duty free. Every war-like, exploring or commercial expedition was accompanied by officially appointed naturalists, to whom every facility was given for work in the interests of the garden. Plants received were propagated without loss of time and distributed, in the first place, to other botanic gardens of France; next, seeds and plants were sent to such of the French colonies and possessions as might profit by them, and lastly, material was sent to foreign correspondents in exchange for similar favors received or expected. The influence of this garden has been far-reaching. All other extensive botanic gardens of the world are copied after this one. The garden is the means of each year add-

ing millions of dollars to the resources and wealth of the French nation and, in addition, it is a powerful factor in public instruction, and has, furthermore, been the means of developing scientific research which has directly or indirectly added greatly to the health, happiness and comfort of the masses, besides giving French investigators in botany first rank.

The Jardin Botanique de la Faculté de Médicine, devoted entirely to the cultivation of medicinal plants, is only a part of the Jardin des Plantes, and was established in 1869. Some 2,000 species are now under high cultivation in a limited area (about nine acres of ground). Since 1877 the garden has been open to the public from the fifteenth of March to the first of November of each year, between the hours of six to six of each day. Students of medicine are admitted on the presentation of cards and are given special privileges when desired. Plants are grouped according to the natural orders and the orders are grouped according to structural similarities. A broad walk separates monocotyls and dicotyls. In connection with this garden there is a museum in which are placed on exhibition vegetable drugs and their derivatives, pharmaceutical preparations, and other materials of interest to medicine and pharmacy. Excellent opportunities are offered to do research work in regard to medicinal plants in the laboratories of chemistry, pharmacology and botany of the Ecole de Médicine of Paris.

The example set by the Jardin des Plantes has been adopted by other countries. At the present time France, England, Germany, Austria, United States, Italy, Holland and Russia have extensive gardens of great economic and scientific value, similar in scope to the Paris gardens. In these the chief attention is given to what are commonly called useful or economic plants, including many medicinal plants.

The largest single botanic garden in the world is the Buitenzorg garden of Java, founded by the Dutch Government in 1817. It occupies 1,100 acres, with a range in altitude from sea level to 6,000 feet. The location with the altitudinal range makes it suitable for the cultivation under natural conditions of nearly all kinds of plants.

The second largest gardens are the Royal Botanic Gardens at Kew, near London, with an area of 260 acres, founded by Lord Capel in 1759. This garden, with its numerous territorial and colonial substations, has at the present time even a wider influence than the

Paris gardens and is the one potent factor in developing the agricultural, horticultural and general botanical resources of the British Empire. The third largest botanic garden in the world is the New York Botanic Garden, in Bronx Park, New York City, established in 1891. It is liberally endowed and well equipped with every means for botanical research and investigation. Substations are being established. The management has just secured the control of the Cinchona station of Jamaica. Dr. N. L. Britton, the director-in-chief, and Dr. D. T. McDougall, the associate director, have already developed the economic and scientific features of this garden to a remarkable degree. This garden is now about to undertake the extensive cultivation of medicinal plants under the direction of Dr. H. H. Rusby, who is pre-eminently qualified to undertake this work.

Additional gardens of great scientific and economic value and wide influence are those of Berlin, Vienna, Dublin, Edinburgh, Palermo, Naples, St. Petersburg and others. Of these the royal gardens of Berlin and Vienna are the most important and deserve special mention for the thorough manner in which they are managed and maintained. In the United States the State Experimental Stations established and maintained by the Government and working under the direction of the Department of Agriculture at Washington, D. C., are doing a remarkable work in combating plant diseases, developing agricultural and horticultural resources, forming new and desirable garden and field varieties, and working in the interests of botany in general. No other country is doing as much in the interests of agriculture. Nor must one forget the work of the experimental stations and horticultural societies maintained by state appropriations.

The Paris garden above referred to is perhaps the largest and most complete garden of medicinal plants in the world. As already stated, some medicinal plants are grown in all of the larger economic gardens. It is also true that certain medicinal plants are promiscuously cultivated on an extensive scale in various countries. For example, cinchona in India, Java, South America; spices in various tropical islands, especially those belonging to Holland and England; cocoa in South America; saffron and licorice in Spain; rhubarb in Russia, chamomile in Germany; ginseng in the United States and China; tea in China; ginger in Jamaica; vanilla in Mexico, etc. There are furthermore gardeners in all countries who de-

vote their entire time time to the growing of medicinal plants. These various plantations, great and small, limited or extensive in the number of species grown, devoted to the cultivation of medicinal and related plants for commercial purposes, are not gardens of medicinal plants in the present acceptance of that term, any more than a wheat or corn field is a botanic garden in the sense in which the term is here used.

In the United States beginnings have been made to establish scientific gardens devoted wholly to the cultivation of medicinal plants. A small area is set aside for that purpose in the St. Louis botanic gardens. A similar small garden is maintained at Ann Arbor in connection with the department of pharmacy of the State University. The Berkeley (State University of California) gardens have about 100 species of medicinal plants among the economic plants under cultivation. Similar beginnings are no doubt made in other States. In addition to these there are instances of private individuals who have attempted such gardens with more or less success; but so far as known to the writer there is no extensive garden of medicinal plants in the United States.

With this brief historical review an attempt will now be made to outline briefly a plan for the establishment of gardens of medicinal plants in the United States. The criticism may be made that this is premature, but in consideration of the fact that partially successful and abortive efforts have been made to establish such gardens, and furthermore the fact that to the writer's certain knowledge plans are now being matured to establish several such gardens on a comparatively large scale makes it highly appropriate and desirable that there should be an opportunity for exchange of ideas and plans, in order that there may be a minimum waste of energy and money in establishing these gardens and that they may work for mutual benefit. The following suggestions are based upon facts thus far obtainable and give the writer's idea of what should be the scope and purposes of such gardens. It should also be noted that the time has passed when it is excusable to start a new and desirable or necessary enterprise on a small scale. In order that the undertaking may fulfill requirements and expectations it should be liberally supported and given the right start. Of course, allowance must be made for a reasonable length of time to mature full plans and to put them in operation.

III. PURPOSES OF GARDENS OF MEDICINAL PLANTS.

(*a*) These gardens should be open to all, thus serving as a very efficient means of instructing the general public.

(*b*) They should serve as a source of special instruction to students of pharmacy and medicine. Most students of pharmacy are familiar only with the dried plant parts used medicinally and the preparations made therefrom, and have practically no conception of the appearance of the living plants from which these dried specimens are obtained. In this respect students of medicine know even less. These are deficiencies in the education of pharmacists and physicians which could be supplied by the gardens of medicinal plants.

(*c*) These gardens would be the only efficient means of developing the possibilities in the State or community for the successful cultivation of plants of medicinal value. They would thus no doubt add millions of dollars annually to the resources of the United States. They would be the means of opening up new chemical, pharmaceutical and medical laboratories and manufacturing establishments, which we are now obliged to patronize in foreign countries.

(*d*) In order that a maximum of good or desirable results may be obtained there should be several large gardens of medicinal plants established in the United States. The least profitable is duplicate work; it would therefore be desirable that these various gardens should be supplemental to each other in developing the resources of the country with regard to medicinal plants. While this is of the highest importance, it is at present premature to formulate a complete plan. A suggestion would be for the movers in the establishment of the various gardens now planned to meet in the near future, say at St. Louis or Kansas City next summer, and mature plans. To illustrate, the following gardens are already launched or are being planned: New York botanic gardens (ready for active work); Shaw botanic gardens, St. Louis (in operation); Philadelphia (contemplated); Ann Arbor garden (in operation); Indiana State University (contemplated); and San Francisco garden (active work begun). It might be suggested that the New York garden investigate and develop the resources of the southeastern United States, West Indies and parts of South America; the St. Louis gardens, the Central States, the southern United States, Mexico and South America; Philadelphia, the northeastern United States, southern Europe, India and Asia; Ann Arbor, the northern United States

Canada and northern Europe; the Indiana gardens, the Central States and the Northwest, including Alaska; the San Francisco gardens, the Pacific States and the Orient, including the Philippine Islands. These are mere suggestions based upon a co-operative idea. The Department of Agriculture would no doubt be willing to co-operate in maturing such plans.

(*e*) These gardens should maintain adequate laboratories of chemistry, pharmacy, pharmacology and botany for research work. For this purpose the laboratories of colleges of medicine and pharmacy as well as those of experimental stations, of manufacturing chemists and pharmacists would be available.

(*f*) The gardens should maintain herbaria and a museum of pharmacy and medicine for the instruction of students and the edification of the public in general. The museum should contain a suitably arranged exhibit of vegetable drugs and their derivatives, mineral drugs, pharmaceutical preparations, apparatus and equipment used in collecting, preparing, drying, garbling, packing, storing and shipping vegetable drugs; in fact, everything of interest bearing on pharmacy and medicine. The herbarium should contain carefully determined specimens of all plants of medicinal value and related plants. It need scarcely be stated that a fairly complete working library is also an essential to such gardens.

IV. PLANTS TO BE GROWN.

Dr. Rodney H. True, of the United States Department of Agriculture, who is in charge of Drug and Medicinal Plant Investigations, in a recent communication made the following statement: "I would suggest the desirability of cultivating small plots of a large number of species of plants having medicinal properties. (The Government has published nothing so far regarding the cultivation of drug plants, apart from a brief outline covering the general plans.) From our standpoint, the larger the number of drug plants experimented with the better." In this the writer heartily concurs. The following plants should be grown in so far as that is possible: The official medicinal plants of all countries; important unofficial medicinal plants; plants reported to have medicinal value, as those used by savages of various countries, and popular "medicinal herbs" not yet known to the science of medicine and pharmacy; plants extensively used as adulterants or sub-

stitutes of medicinal plants; plants having no medicinal value but used in medical and pharmaceutical practice. Enough of each species should be grown to supply the requirements of the various gardens.

V. GROUPING OF PLANTS.

This is a matter of greater importance than would appear on first consideration. A grouping according to natural orders or according to physiological action or constituents is not natural, and to make such grouping in a measure successful, entails extra labor and expense and the scheme cannot be carried out consistently or completely in many instances. A more rational plan would be to group them ecologically, that is, according to the natural requirements and conditions of soil, light, moisture and temperature. According to such a plan, the following would be a brief tentative outline of the groups:

Group I.—Trees and woody climbers (as grape, ivy, poison ivy), including those herbs and shrubs which require shade (forest and woodland shrubs and herbs).

Group II.—Shrubs; beginning with the larger tree-like forms (dogwood, spiræa, etc.), grading off with smaller shrubs (blackberries, etc.).

Group III.—Herbaceous plants and small shrubby plants which do not require shade. These may again be separated into subgroups according to nature of soil, water required, climbing herbs, runners, smaller herbs and large succulent herbs, etc. This group would consist largely of annuals and biennials and is the largest and most important group.

Group IV.—Water plants, that is, such as are wholly or partially snbmerged below the surface of the water. These are to be grown in artificial ponds when necessary.

Group V.—Bog or marsh plants, such as require very wet soil. These for the most part also require more or less shading.

Group VI.—Xerophytic or dry-soil plants. They require comparatively dry sandy soil with good drainage and plenty of sunlight. They are mostly of tropical or sub-tropical origin, and must be grown in well-protected areas or in hothouses.

Group VII—Tropical plants. These must for the greater part be grown in hothouses.

It is hoped that these suggestions may be of some practical ben-

efit. In conclusion, it may be stated that active work has been begun on the San Francisco Garden of Medicinal Plants. About eight acres of ground in Golden Gate Park are set aside; some 400 or 500 different species of medicinal plants will be seeded or planted in January, 1904, and additions will be made as rapidly as possible.

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MAKING OF COMPRESSED TABLETS.

By George B. Weidemann.

If a pharmacist wishes to manufacture compressed tablets and triturates he can do so very economically, as the apparatus necessary for such work will be found in every drug store, with the exception of the machine, and its purchase is his only real expense.

The preparation of the material to be compressed is the most difficult part of the work, for each substance has its own peculiarity and must be treated in a little different manner, but the general plan of procedure is the same.

The ingredients must first be reduced to a very fine powder, granulated, dried and lubricated before it is ready to compress.

After thoroughly mixing the powder, to granulate, water, dilute alcohol, or a mixture of syrup and water, are the substances usually employed, but water makes a firmer granule, which is less liable to disintegrate in handling.

The powder is moistened until it has the consistency of dough and is then forced through a No. 16 or No. 20 sieve and dried. For a small tablet or triturate a No. 20 sieve is better, but for larger tablets a No. 16 sieve is used.

To facilitate drying, a drying oven may be used, but this is not necessary, for if spread on paper in a dry place the granules will dry very quickly; but, if this method is employed, a piece of paper should be laid over the material to keep out particles of dust.

After the material is thoroughly dry, it is lubricated, and for this several substances are used. The manufacturers spray the granules with liquid petrolatum, using 10 or 12 drops to the pound, and about 2 per cent. of talcum is added to prevent the material from adhering to the dies; but I have found this very unsatisfactory, for if only a few drops too much of liquid petrolatum are added the

material will not compress, and to eliminate this possibility of failure, I use French chalk entirely and have been successful in all instances.

The material is now ready to compress. The tablet should not be made too hard or it will not disintegrate when swallowed, but it must be made sufficiently hard to prevent disintegration in handling. To facilitate solubility a small quantity of an inert powder is added to the ingredients and a mixture of sugar of milk 5 parts and cane sugar 1 part is usually added.

With a Stokes machine it is possible to compress about 100 tablets a minute, as one revolution of the wheel completes the tablet.

Quite a few substances can be compressed without any preparation, as the material comes from the manufacturer granulated. To this class belong such chemicals as salol, ammonium chloride, bromides, iodides and chlorate of potash.

Triturates, such as strychnia and its salts, corrosive sublimate, calomel, calcium sulphide and arsenous acid, can be made at a cost of from 2 to 4 cents a thousand (labor not being accounted for), while the manufacturer will charge from 35 to 50 cents for a like quantity. All tablets can be made for from 10 to 40 per cent. of what they cost to purchase them from the jobbing-house, excepting such tablets as chlorate of potash and ammonium chloride, which can be bought for a slight advance of the drug itself, and hence it would not pay one to make them.

If a pharmacist puts up headache tablets, cold tablets, or voice lozenges, he can save about 75 per cent. by making them himself, as the manufacturers charge more proportionately for special formulas than for their regular listed ones.

Some tablets can be made by like methods, but quite a few require special manipulation.

Sodium salicylate, for instance, should be granulated with a gum, and syrup of acacia is often employed.

Quinine sulphate requires the addition of 5 per cent. powdered acacia and 10 per cent. powdered cane sugar, or else it will not compress.

Many others require special manipulation which can only be learned by experience with the drug itself.

BIOGRAPHICAL SKETCHES.[1]

By M. I. Wilbert.

DR. DAVID B. TRIMBLE.

At a meeting of the Philadelphia College of Pharmacy that was held on March 25, 1834, the Board of Trustees reported that they had conferred the degree of Graduate in Pharmacy on nine candidates who had duly complied with all the requisitions of the College. The first name on the list, as reported (A.J.P., 1834, page 255), was that of David B. Trimble, the subject of this sketch, who for a number of years was the oldest living graduate of the college. David Brown Trimble was born in the city of Baltimore on May 29, 1813. As a young man he came to Philadelphia with his brother Joseph, and both of them subsequently entered the Philadelphia College of Pharmacy as students, graduating together in the same year. As a student in the Philadelphia College, David B. Trimble had the very great advantage of having as instructors two of the greatest teachers of Materia Medica and Chemistry that this country has ever seen. These proficient teachers, Dr. George B. Wood and Dr. Franklin Bache, had at that time already established for themselves a reputation for ability and thoroughness in their chosen departments that, soon after, brought to them ample honors and liberal compensation in more elaborate fields of labor.

When we consider the mental caliber of these early teachers in a school of pharmacy, it need not surprise us to find that the students who came in contact with them, developed in after life traits that readily distinguished them from the average of their fellow workers in the same field.

As noted before, it was from this school that David B. Trimble graduated in 1834, the subject of his thesis being "Colchicum Autumnale." After graduating at the Philadelphia College of Pharmacy David B. Trimble entered the Jefferson Medical College as a student. Here he graduated in the spring of 1837, having successfully passed the required examination and presented a thesis on "Scrofula."

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[1] This is the third paper of a series of biographical sketches being prepared by Mr. Wilbert. Sketches of Alfred B. Taylor and Maurice W. Alexander appeared in the March, 1903, number of this Journal, and a sketch of Professor Maisch in the August number.

Dr. Trimble began the practice of medicine in Cecil County, Md. He was married, on November 5, 1840, to Elizabeth Trimble Asken, at East Nottingham Meeting, Md.

Dr. Trimble appears to have been imbued with the roving spirit that was so prevalent among native-born Americans in the first half of the nineteenth century. We find him practising medicine in Burlington, N. J., Marlton, N. J., and finally in Beverly, N. J., where he was well known and is still remembered by a number of the older residents. About 1864, he removed to Chicago, Ill., where he became acquainted with a fellow alumnus of the college, Mr. A. E. Ebert, who at that time was actively interested in the Chicago College of Pharmacy, being the corresponding secretary and chairman of the committee on the School of Pharmacy. In 1872, at the suggestion of Mr. Ebert, Dr. Trimble was offered, and accepted, the chair of Materia Medica and Toxicology, in the Chicago College of Pharmacy. This chair he occupied for three seasons, or until the spring of 1875, when he resigned. Shortly after this he removed to Evanston, Ill., where he practised medicine for some years. He later removed to Geneva Lake, Wis. Feeling that he had spent his more active years, Dr. Trimble retired from the practice of medicine and removed to Starke, Bradford County, Fla. The remaining years of his life were spent quietly between Starke, Fla., and Philadelphia. During this later period he spent some time in Philadelphia and cultivated quite a circle of acquaintances, who were charmed by his interesting and genial personality and who still recall with pleasure the interesting reminiscences of travel and adventure with which he was wont to entertain them.

Dr. Trimble died at Fernandina, Fla., September 4, 1901, having reached the eighty-ninth year of his age. Of the eight children that had been born to him, but three survived—Mrs. Harry Swinburne of New York, Mr. John J. Trimble, of Danville, Ill., and Mr. Henry P. Trimble, of Fernandina, Fla. To these the writer is indebted for many of the facts and data included in the above sketch.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

QUANTITATIVE CHEMICAL ANALYSIS. By the late C. Remigius Fresenius. Authorized translation of the greatly amplified and revised sixth German edition, by Alfred I. Cohn. 2 vols., 8vo, 2,076 pages, 280 figures. Cloth, $12.50.

As a result of the interest in analytical chemistry, new methods of analysis are quite numerous, and improvements of older methods are continually being suggested. It is becoming more and more apparent that while quantitative analysis is based upon certain basic principles, as understanding the "properties of precipitates," and the insidious causes of error are being eliminated, nevertheless there is a personal element that enters into the work which influences, in a measure, the result of different workers. Uniform methods of analysis are being encouraged, and as time goes on there will be more disposition for the adoption of uniform methods as are at present carried out by the agricultural chemists.

Many books on quantitative analysis have appeared. Some of these have excellent features which commend them. We have not, however, seen a book on this subject which may be considered to be so complete and so essential to the analyst as the present revision of Fresenius. It is so full of methods and references to the important literature that one almost wonders that it has been possible for a single individual to write a work containing so many of the results of the latest researches in analytical chemistry, including methods for both inorganic and organic substances.

A brief summary of the more important subjects treated of in this work is as follows: determination of quantity and measuring; preparation of substances for the processes of quantitative analysis; general procedure in quantitative analysis; reagents; forms and combinations in which substances are separated from each other, or in which their weight is determined, including basic radicals and acids; determination of basic radicals and the estimation of acids; qualitative examination of organic substances; determination of the elements in organic substances; determination of the equivalent of organic compounds; calculation of the constituents sought from the compound obtained in the analytical process and conversion of the result in percents; deduction of empirical and rational formulas; calculation of the vapor density of volatile substances; analysis

of water; analysis of some technical products and minerals, with processes for determining their commercial value; determination of sugars, starch, dextrin, alcohol and tannin; estimation of anthracene; estimation of the inorganic constituents of plants; analysis of soils, manures and atmospheric air; official methods of analysis adopted by the Association of Official Agricultural Chemists; some principles and methods of rock analysis; tables for the calculation of analyses.

The work is to be commended to all analysts, and will be consulted for years to come, as it has in the past, as an authoritative work of reference.

A DICTIONARY OF MEDICAL SCIENCE. Containing a full explanation of the various subjects and terms of Anatomy, Physiology, Medical Chemistry, Pharmacy, Pharmacology, Therapeutics, Medicine, Hygiene, Dietetics, Bacteriology, Pathology, Surgery, Ophthalmology, Otology, Laryngology, Dermatology, Gynecology, Obstetrics, Pediatrics, Medical Jurisprudence, Dentistry, Veterinary Science, etc. By Robley Dunglison, M.D., LL.D., Late Professor of Institutes of Medicine in the Jefferson Medical College of Philadelphia. New (twenty-third) edition, thoroughly revised, with the pronunciation, accentuation and derivation of the terms, by Thomas L. Stedman, A.M., M.D., Member of the New York Academy of Medicine. In one magnificent imperial octavo volume of 1,224 pages, with about 600 illustrations, including 85 full-page plates, mostly in colors, with thumb-letter index. Cloth, $8.00, net; leather, $9.00, net; half morocco, $9.50, net. Lea Brothers & Co., Philadelphia and New York.

The present edition is the twenty-third during seventy-five years. This speaks well for the original author as well as publishers and those connected with the later revisions, as it is almost impossible to prevent the fossilization of dictionaries and encyclopedias. Dunglison in his earliest work made it clear that the dictionary which he had in mind was to be not merely a lexicon or dictionary of terms, nor a work which was to contain a bald definition or array of synonyms, but there must be an illumination of the subject so that each word must have, in addition to definition, some indication of its relationship to various departments of medicine. The result has been a work which has proven to be almost indispensable to students and practitioners. In the present edition numerous illustrations

have been introduced, as of blood-cells, urinary sediments, methods of bandaging, parts of the human body, microorganisms, etc.

ESSENTIALS OF VOLUMETRIC ANALYSIS. An introduction to the subject, adapted to the needs of students of pharmaceutical chemistry. Embracing the subjects of Alkalimetry, Acidimetry, Precipitation Analysis, Oxidimetry, Indirect Oxidation, Iodometry, Assay Processes for Drugs, Estimation of Alkaloids, Carbolic Acid, Sugars, Theory, Application and Description of Indicators. By Henry W. Schimpf, Ph.G., M.D., Professor of Analytical Chemistry in the Brooklyn College of Pharmacy. Illustrated. 12mo, vii + 227 pages, 38 figures. Cloth, $1.25. New York: John Wiley & Sons. London: Chapman & Hall, Limited. 1903.

Volumetric analysis, like the study of organic chemistry, has an unmistakable charm for the careful student, because chemical themes and laws are continually brought into play and accurate results are assured. The author of the present volume has made an excellent reputation as an author of a valuable text-book of volumetric analysis and the present work has apparently been prepared to popularize this subject.

The subject-matter is systematically arranged as far as can be, and treated as concisely as is consistent with clearness of expression. The processes are grouped under five headings: Neutralization, Precipitation, Oxidation, Indirect Oxidation, and Iodometry. The principles underlying each group are definitely indicated, and their application illustrated by numerous practical examples. Other subjects treated include methods of calibration and of the accurate reading of graduated instruments, the calculation of the results of analyses, the preparation and standardization of volumetric solutions. The indicators, their selection for special cases and the ionic theory regarding their action, as well as assay processes for phenol, sugars and vegetable drugs, also receive special treatment.

The book is to be commended to students and others interested in volumetric analysis and ought to be in the hands of every pharmacist in the United States. We need more books on advanced pharmacy which are written as clearly as this one and with so much interest and profit to the pharmacist.

OBITUARY.

DR. H. M. ALEXANDER.

Dr. H. M. Alexander, who had achieved a national reputation as a propagator of vaccine virus, died at his summer residence at Conewango, Pa., on October 13, 1903, after a short illness from angina pectoris.

H. M. Alexander was born at Lewisburg, Union County, Pa., May 17, 1851. He graduated from Bucknell University in 1873, and then took up the study of medicine, graduating from the University of Pennsylvania in 1876. After spending a short time in the hospitals studying and obtaining experience, he located at Marietta, Pa., and engaged in the practice of his profession. He soon won the confidence of the people and became popular and enjoyed a handsome practice. He was esteemed as one of the most enterprising and upright citizens of the county.

Dr. Alexander became interested in the subject of vaccination and the propagation of bovine virus which had been introduced into the United States by Dr. Henry A. Martin in 1870. He made a careful study of the best methods and the proper conditions and surroundings necessary to insure the production of safe and reliable vaccine. He fully recognized the importance of the subject and was convinced that all establishments for this purpose should be located in the open country, where pure air, perfect cleanliness and the best sanitary conditions can be attained.

In 1882, he established his laboratory and vaccine farm at Marietta, in the rich and fertile county of Lancaster, in what has been considered an ideal spot. This farm was looked upon as a model, and Dr. Robert L. Pitfield in his report on the inspection of vaccine farms made to the Pennsylvania Board of Health commented upon it as "an admirable establishment in every particular." It was as proprietor of the Lancaster County Vaccine Farm that Dr. Alexander was best known and gained a national reputation and a business that was international. He was an enthusiastic student of the subject and an energetic business man, and his efforts met with deserved success, and under his personal supervision his biological laboratories developed into an important industry.

The occurrence of epidemics of smallpox, necessitated the providing of facilities for turning out at such times of enomorus quan-

tities of virus, and in order to meet such demands, in 1886 he established a branch laboratory at Omaha, Neb., and as an additional precautionary measure a supplemental plant was erected in 1894 on a farm near McEwensville, in Northumberland County, Pa. In 1889, Dr. Alexander decided to relinquish the practice of medicine and devote his entire time to the extensive business. Subsequently the style of the firm was changed to Dr. H. M. Alexander & Co., and quite recently extensive improvements were made in the Marietta laboratories and a department established for the manufacture of antidiphtheritic serum.

Dr. H. M. Alexander was an active member of the Lancaster City and County Medical Societies and a contributor to their proceedings. He was also a member of the Pennsylvania State Medical Association and attended their recent meeting in September at York, Pa. The day following his return from this convention he was taken ill, but appeared to be improving until overcome by a sudden attack of angina.

Dr. H. M. Alexander was married in 1877 to Miss Martha Woolman, of Philadelphia. She and six children survive him.

G. M. B.

BARNARD SIMPSON PROCTOR.

By the death of Barnard Simpson Proctor, F.I.C., in September last, British pharmacy lost one of its most able and honored exponents.

Yet, notwithstanding the distinction won by Mr. Proctor as a pharmaceutical chemist, teacher and writer, his life may be said to have been one long protest against the fate that made him a pharmacist. As a boy, he had a taste for mechanics and physics, and his desire was to become an optician and philosophical instrument maker. In an appreciation of him, the editor of the *Chemist and Druggist* says: "Proctor ought never to have been behind the counter. It is good for pharmacy that he was; but his abilities and his philosophic mind would have ensured for him high rank in pure science."

Mr. Proctor was born at Newcastle-on-Tyne in 1829, and was the fifth in line of five generations of chemists. After passing his major examination in 1853 he entered into partnership with his father, the late William Proctor, pharmaceutical chemist, it being the desire of his father that he be a druggist and chemist, and con-

tinued in business until 1897, when he retired. He became a member of the Pharmaceutical Society in 1857, and was later, in 1863, one of the founders of the British Pharmaceutical Conference, being also the author of the first paper presented to this body. In 1869 he was appointed lecturer on pharmacy at the College of Medicine of Durham University, being the first English pharmacist to hold a university chair. His lectures at the University were embodied in his book, "Lectures on Practical Pharmacy," published some thirty years ago. Mr. Proctor had devoted considerable of his time to simplifying the tests for purity, and in 1891 these were published under the rather characteristic title, "A Manual of Pharmaceutical Testing for the Man of Business and His Assistant." As an example of his thoroughness, it may be cited that in his last paper to the British Pharmaceutical Conference, in 1894, which was on Rhubarb, were recorded the results of twenty-six years of experimenting.

In addition to his accomplishments in the science and art of pharmacy, Mr. Proctor was a power with his pen, and was regarded as being at one time the first of controversialists in English pharmacy. The number of papers published by him were legion, and it is said that "his interest in pharmaceutical politics was keen to the last."

Mr. Proctor's personal qualities were such as to endear him to those who knew him best, being of even temper, warm-hearted, and just. In this connection it is interesting to note that he could never be prevailed upon to accept the offers of the presidency of the British Pharmaceutical Conference, nor would he accept the honorary degree of M.A. from Durham University, claiming that an arts degree was not suitable for him, and at that time the University did not bestow scientific degrees.

The last year of Mr. Proctor's life was spent at Westbury-on-Trym. Mrs. Proctor, who is a niece of Michael Faraday, and two sons and two daughters survive him. F. Y.

CHICAGO COLLEGE OF PHARMACY.

The Alumni Club of the Chicago College of Pharmacy held its second monthly meeting of the season, at the rooms of the Chicago Drug Trade Club, on the evening of November 4th. Mr. L. I. Schreiner presided.

The feature of the evening was the review of current pharmaceutical literature by members of the club. Mr. G. A. Brenke reviewed the *American Druggist* for October 28th. A discussion on the preservation of Syrup of Hydriodic Acid was followed by a proposition to increase the strength of this official syrup to 5 per cent. Professor Hallberg thought such an increase desirable, in that it would provide a suitable substitute for the alkaline iodides. Mr. Thorburn doubted the desirability of such a substitution from a therapeutic standpoint, and suggested that iodides of an organic base would be preferable. A lively discussion followed the presentation of the salient features of the Patent Commissioners' report on the petition of the committee chosen by the N.A.R.D. to confer with the President. Professor Hallberg was appointed a committee of one to draft resolutions expressing the sentiment of the club on this question for presentation at the next meeting.

Professor Day reviewed the leading articles in the AMERICAN JOURNAL OF PHARMACY for October, especially Professor Schlotterbeck's paper on "The Mydriatic Alkaloids."

Mr. Thorburn reviewed the October number of the *Druggists Circular*. The greatest interest was manifested in the editorial entitled "A Menace to the Pharmacopœia." Professor Hallberg spoke of the proposition to make a general statement in the *Pharmacopœia* to the effect that the official requirements applied to the articles in the U.S.P. only when used for medicinal purposes; and also of the elimination of the common names, such as "Sweet Spirit of Nitre," etc. Mr. Hereth, Mr. Schreiner and others took part in the discussion.

The correctness of the statement of Dr. Wiley, in his address before the N.A.R.D., in Washington, D.C., recently, as reported in the journals, that the Federal Government does not concern itself as to the quality of drugs imported, only as to the duty to be collected, was challenged by Professor Hallberg, who said that instead of its being a matter of indifference whether opium, for example, contains 5, 10 or 20 per cent. morphine, the customs law levies a duty of $6.00 a pound on opium containing less than 9 per cent. of morphine and opium prepared for smoking, while opium containing not less than 9 per cent. morphine is subject to a duty of $1.00 per pound; thus opium which falls below the U.S.P. standard is excluded from the drug market in the United States.

Several other journals were to have been reviewed, but the members who had agreed to take them were unable to be present.

Mr. Snow was appointed to arrange for the next meeting of the club, to be held at the same hour and place on December 2d.

At the December meeting, Mr. C. N. Snow presided. The report of the committee appointed at the preceding meeting to draft resolutions regarding the decision of Patent-Commissioner Allen in the case of the protest made by the committee of the National Association of Retail Druggists was received, and the resolutions reported were unanimously adopted. The chairman was instructed to send copies of the resolutions to each Congressman and Senator from Illinois, as well as to the President. The following is a copy of the resolutions:

WHEREAS, The interests of legitimate medicine are seriously injured and threatened through the operation of the patent laws of the United States, under which patents may be obtained not only on the process of manufacture, but on the finished product, and

WHEREAS, Protection in the process of manufacture is amply sufficient to stimulate inventive genius, and promote in the highest degree adequate reward for the talent and labor employed in the discovery of remedial agents, and

WHEREAS, Protection in the patent of the product inevitably tends to discourage inventive genius in the discovery of improved methods of manufacture tending to higher qualities and increased efficiency in remedial agents, and

WHEREAS, The laws of other nations, notably those of Germany, recognize no right of patent in the finished product, but wisely and equitably limit such protection to original processes of manufacture, and

WHEREAS, Under existing treaties between the United States and foreign nations the citizens of such foreign nations are given all the privileges enjoyed by the citizens of the United States, thus supplying them with a degree of protection not accorded them under their own government, and which tends to grievous extortion in the sale of such foreign products in the United States, and to the establishment of merciless monopolies, therefore be it

Resolved, That we denounce the defense of such discriminating legislation by Commissioner of Patents Allen as opposed to the dictates of justice, to the rights of domestic inventors, and to the interests of American manufacturers and of retail pharmacists in every State, and be it further

Resolved, That we favor a renewed appeal to the President of the United States, invoking his aid in such revision of existing treaties with foreign nations as shall extend to foreign manufacturers in this country such privileges only as they respectively enjoy in their own country, and as American manufacturers and American inventors enjoy in such country. We also ask the Congress to so revise the patent laws of the United States as shall permit protection in the process of manufacture only, and not in the product.

Mr. Frank E. Fisk reviewed the November number of *Merck's Report.* Considerable discussion was had on the extemporaneous preparation of absolute alcohol from strong alcohol. Mr. Thorburn reported that he had frequently tried the method of using dried copper sulphate, and had failed to get an alcohol stronger than 97 per cent. He had found that lime freshly ignited gave better results.

Mr. W. D. Brenke reviewed the *Western Druggist* for November. With regard to the formula for syrup of calcium lacto-phosphate proposed by C. H. LaWall, Professor Hallberg stated that the plan of using the concentrated solution of the lacto-phosphate was an excellent one, and would apply not only to this syrup, but to other similar syrups.

Professor Day gave an abstract of the original papers appearing in the AMERICAN JOURNAL OF PHARMACY for November.

Mr. Sheblessy reviewed the *American Druggist.* In reply to a question concerning the practice of druggists in lending clinical thermometers to patrons, Mr. Sheblessy stated that the practice was a common one in his neighborhood, and would be difficult to do away with, except by the united action of the druggists of each district.

Mr. A. D. Thorburn commented on the articles presented in the November number of the *Druggists Circular.* In connection with the editorial "The Doctor's Duty," he stated that he had information, which he deemed reliable, to the effect that a "phenacetin crusade" would soon be inaugurated in Chicago.

Professor Hallberg reported on the *Journal of the American Medical Association,* summarizing three papers on pharmacology read before the section on materia medica, pharmacy and therapeutics, viz.: "Is Pharmacologic Action Determined by Chemical Structure or by Physical Characters?" by A. R. Cushny; "The Relations Between the Pharmacologic Actions of Drugs and Their Therapeutic Indications," by M. V. Tyrode; and "Research Problems of Pharmacology," by Torald Sollmann. The papers which appeared during the month of November were of unusual interest to pharmacists, especially the suggestions of Dr. Sollmann, relating to research, that a central laboratory should be established which could supervise and correlate the work of independent investigators. In that way only can the physiologic action of drugs on animals be compared with clinical observations, and the best therapeutic deductions be drawn.

PHILADELPHIA COLLEGE OF PHARMACY.

Historical Committee.[1]

In accordance with the recommendation contained in the annual address of our President, Mr. Howard B. French, the undersigned were appointed as "The Historical Committee."

The early apothecaries of Philadelphia were assiduous workers in developing the scientific thought and tendencies of their day, and many were equally prominent in social positions and likewise active in professional and commercial interests. No small amount of credit is due to them for the prominent part they took in laying the foundations of a number of successful educational and charitable institutions, and the marked influence they exerted in the establishment of prominent retail and wholesale drug stores, pharmaceutical manufactories, and chemical industries. The drug trade has kept pace with the progress and development of this modern city and has furnished a number of noted examples of individual energy and success.

The Philadelphia College of Pharmacy stands as a central figure around which are clustered many prominent persons, and interwoven and associated more or less closely with her history are the interesting experiences of many whose lives have been devoted to building up enterprises connected with pharmaceutical, chemical, and other industries. Her growth and development is an important part of the history of Pharmacy.

These older pharmacists have mostly passed away and much interesting historical data has undoubtedly been lost, but a few of their associates and acquaintances are left and they should at once record their recollections of the past and the reminiscences connected with these associations.

We believe that this is the first organized systematic effort that has been made to obtain this information, which must be of more than local import, and it becomes the duty of this committee to collate, compile, record and permanently preserve all such interesting and valuable matter.

It is the desire of the Historical Committee to make these records

[1] Members of Committee: George M. Beringer, Chairman, 501 Federal Street, Camden, N. J.; William J. Jenks; Prof. Henry Kraemer; Jacob M. Baer; and M. I. Wilbert, Secretary, German Hospital, Girard and Corinthian Aves., Philadelphia, Pa.; Howard B. French, ex-officio.

as complete and thorough as possible. We want to obtain all the available data relating to individual experiences and life histories, to trace the growth and development of modern pharmacies and wholesale drug establishments, the manufacturers of pharmaceuticals and chemicals and the allied industries.

This letter is our personal appeal for assistance to any one possessing knowledge relating to these old-time apothecaries, the trade conditions and customs of their days, the stores, the life works, habits, associates, scientific, political and social attainments, etc. It is directed to relatives and friends as well as to their pharmaceutical associates and *your co-operation is earnestly solicited.*

Will you please promptly write the Chairman or Secretary, giving such information as possible, and loan the Committee any printed or written data that you may have? These communications should be replete with personal reminiscences, anecdotes and experiences, and what may appear to you as only fragmentary notes may be of value to the Committee as confirming and adding to information from other sources.

It has been proposed that this Committee should also prepare a complete catalogue of the graduates of the Philadelphia College of Pharmacy, setting forth after each name the date of birth, the class date, the address, business location and career, politic and scientific honors attained, etc. While this will greatly extend the labors of this Committee the completion of such a list will be of great interest to the Alumni and a permanent record of value to the College. Will every living graduate favor us with replies to the enclosed queries and information regarding those who are deceased.

The College already possesses a number of historic relics and souvenirs and it is now proposed to establish in its museum a section devoted to the exhibition and preservation of such materials as obsolete drugs, preparations, utensils, apparatus, shop furniture, books, papers, diplomas, medals, tickets, portraits, etc., associated with pharmaceutical history. May we hope that this permanent exhibit will receive your support and that you will donate any such historic material in your possession?

We ask your careful consideration of the enclosed and a prompt reply.

Please answer the following queries and supply any additional information or detailed statements possible and mail promptly to The Historical Committee,

Philadelphia College of Pharmacy. If the space allotted on this sheet is not sufficient to contain all the information you can give, then kindly write such replies on other sheets; you can't supply too much.

1. Name.
2. Address.
3. Give present business.
4. Give date and place of birth.
5. During what years did you attend lectures at the P.C.P.?
6. Who were the teachers at the time?
7. Give any interesting experiences as a student.
8. What year did you graduate?
9. Give title of thesis.
10. Give any information regarding your early life, education, and personal history you care to supply.
11. What classmates have had specially noteworthy careers?
12. In what stores were you employed?
13. Give your business associations and career since graduation.
14. What political, educational or social positions have you held?
15. What educational or honorary degrees have been conferred upon you?
16. What organizations are you a member of?
17. Who were the prominent pharmacists in your locality?
18. Give in detail any peculiarities of these druggists, their habits, associates, stores, fixtures, customs of the time and place, style of trade, character of customers, etc.
19. Have you any pictures of these old pharmacists or their stores?
20. Have you any printed or written matter relating to same?
21. What anecdotes or reminiscences of this period can you tell?
22. What relics or souvenirs associated with these older druggists or pharmaceutical history do you own?
23. Do you desire to donate any such relics or records to the Historic Section of the Museum for permanent preservation?
24. Do you know of any one possessing such relics or souvenirs?
25. Can you give the Committee the address of any persons possessing information or records relating to these subjects of pharmaceutical history?

PHARMACEUTICAL MEETING.

The stated pharmaceutical meeting of the Philadelphia College of Pharmacy was held on Tuesday afternoon, December 15th, with Prof. Samuel P. Sadtler in the chair. The meeting was an especially interesting one and well attended.

Prof. John Uri Lloyd, of Cincinnati, who is well known as an author not only of scientific books but of fiction, especially folklore studies of Kentucky, was the first speaker introduced, and gave an address on the "History of the Eclectic Resinoids and Their Termi-

nology." The address was largely historical and devoted in the main to the nomenclature of the alkaloids, resins and similar principles introduced into medicine during the first half of the last century. Professor Lloyd was fortunate in having an intimate acquaintanceship with Prof. John King and others who were instrumental in introducing these substances into medicine, and he stated that inasmuch as the history of these circumstances is fast passing away he was glad to be able to give the facts to the Philadelphia College of Pharmacy for record. Professor King aimed to formulate a plan that would accord with rule and in which the eclectic concentrations, as they were called, should be properly differentiated from the alkaloids that were then beginning to attract attention. He first called these eclectic concentrations "resins," and then, when the demand was for a single word to describe them, as podophyllin for resin of podophyllum, the termination "*in*" was adopted to distinguish these preparations from the alkaloids, which had the affix "*ia*," "*ine*" or "*ina*."

Professor Remington expressed his appreciation to Professor Lloyd for having cleared up this subject and said that he had honored the Philadelphia College of Pharmacy by giving this valuable paper here. He then exhibited some specimens of the eclectic concentrations which formerly belonged to Professor Procter, some of these having been prepared by Prof. Edward S. Wayne. He said that the subject of nomenclature was an important one and that druggists are oft times confused when they receive a prescription for a resinoid when there is a corresponding alkaloid.

Mr. Wilbert said that fifty years ago the discussion of the eclectic resinoids was a very live question, and referred to an article by Prof. Edward Parrish on "Eclectic Pharmacy," which was published in the AMERICAN JOURNAL OF PHARMACY in 1851 (Vol. xxiii, page 329). In this paper Professor Parrish calls attention to a paper by W. S. Merrill, in which the latter claims to have introduced several eclectic resinoids, viz., those from podophyllum, cimicifuga, sanguinara, leptandra, iris and certain other drugs; and in this connection Professor Parrish calls attention to the fact that John R. Lewis had previously made a study of podophyllum (see AMER. JOUR. PHARM, Vol. xix (1847), page 165). Mr. Wilbert also mentioned the paper by William Hodgson, Jr., which was published in this JOURNAL in 1831 (Vol. iii, page 273).

Evan T. Ellis remarked that Professor Lloyd's paper was exceedingly interesting to him as it cleared up what had been for these many years a misapprehension involving the rectitude of reputable botanic drug houses now in existence—that the admixture of carbonate of magnesia was not a wilful adulteration as he supposed—but was really introduced to facilitate the drying of these resinoids as they were termed.

Mr. Wilbert also stated that in 1850 the Legislature of Pennsylvania granted a charter for an eclectic medical school in this State, which was the second established in the United States. This school was located at Sixth and Callowhill Streets, over H. N. Rittenhouse's drug store. Mr. Rittenhouse was a publisher at that time of the eclectic publications. There seemed to be a little misunderstanding as to who this Mr. Rittenhouse was, and Mr. McIntyre was pretty well convinced that it was not the Mr. H. N. Rittenhouse who is still living and a member of the Publication Committee of this JOURNAL. Since the meeting the latter has informed the Secretary that the Henry Rittenhouse referred to was originally a comb-maker in Kensington; then an eclectic druggist at Sixth and Callowhill Streets, and from there he removed to Seventeenth Street near Ridge Avenue, where he died a few years ago, being quite an old man at the time of his death.

M. I. Wilbert gave an address on "The Early History of Medicine in America," which was illustrated with a large number of excellent lantern-slides, among these being photographs of distinguished medical men of that time (see this JOURNAL, page 1). Mr. Wilbert also exhibited a photograph of the old Friends' Almshouse, the grounds of which were used for the cultivation of medicinal plants up until 1840 or 1850.

E. T. Ellis, referring to the old-time Friends' Almshouse, on Walnut Street between Third and Fourth Streets, Philadelphia, mentioned by Mr. Wilbert, and the cultivation of medicinal herbs in the little gardens, said that although the main structure and all the cottages were torn down in the '30's or early '40's, one old Friend was permitted to retain her home and garden until her death in the '60's, viz., Nancy Brewer, who had quite a reputation with Friends and others for her medicinal herbs—supposed to be all grown in her garden. But Nancy, he said, "did draw on us in her last years for the Shaker products—as we had the agency of

the Shaker Society herbs." E. T. Ellis remembers the Friends' Almshouse perfectly, as he was born near it in 1826.

Professor Lloyd said that he was much interested in the address of Mr. Wilbert and remarked that he was sure that there was a thesis in the archives of the University of Pennsylvania on "The Use of Chloroform in Medicine," which antedates any other publication on this subject. He said that the name of John Morgan called to mind the famous Confederate cavalryman of the same name, whose escape from the Columbus penitentiary during the war created such excitement throughout the North. Professor Lloyd said that while the North was mystified by the disappearance of Morgan and whilst large amounts of money were offered for his apprehension, he was being cared for by friends in Stringtown County, Ky. Mr. Boring also commented on the Morgan raid and said that he was with the Pennsylvania regiment which did duty in Kentucky and Tennessee at that time. He thought it was a matter of regret that John Morgan was killed by a Union soldier.

Prof. Albert Schneider, of the California College of Pharmacy, sent a communication on "Gardens of Medicinal Plants," in which he pointed out their value in the progress of medicine and pharmacy, and gave some suggestions as to how they may be established in the United States. (See p. 19.)

Mr. William B. Marshall, of the Smithsonian Institution, Washington, D. C., contributed a comprehensive paper on the "Production and Use of Cocoa."

Prof. Henry Kraemer exhibited some hides or so-called "Ceroons," used for packing Honduras sarsaparilla, which were received from Messrs. Lehn & Fink, New York City; some specimens of ginseng received from Jacob Sutliff, P.D.; a large aquarium presented by Messrs. Whitall, Tatum & Co.; a specimen of Yerba Peckeum presented by Mr. Richard Shoemaker; and specimens of a Hercules beetle and a green tiger beetle which he had received from Luis Javier Guier, P.D., of Cartago, Costa Rica, C. A.

The following provisional programme has been arranged for the next meeting: "Lime Water," by M. I. Wilbert, Ph.M.; "The Manufacture of Thermometers," by Gustavus Pile; "Examination of Commercial Peppers," by James W. Gladhill, A.M., P.D.; "Formulas for Pastes," by Prof. Clement B. Lowe.

HENRY KRAEMER, *Secretary.*

NOTES AND NEWS.

THE HISTORICAL COMMITTEE of the American Pharmaceutical Association has undertaken the collection of the correspondence of such men as Procter, Squibb, Maisch, Rice, and others. Persons who are in possession of letters from these men or of other representative men of American pharmacy and who are willing to have them deposited in the archives of the American Pharmaceutical Association, are requested to send them to the committee in order that they may be properly mounted, classified, and bound.

The committee has secured both paper and covers of standard size, so that the volumes of correspondence will constitute a uniform library when completed. Persons who are willing to aid in this work by collecting the correspondence of any one man who has rendered conspicuous service to American pharmacy in his day, should apply to the chairman for standard paper and covers. The committee hopes to make a creditable showing at the Kansas City meeting next summer.

Letters may be sent to one of the following persons or to the chairman, Ed. Kremers, Madison, Wis.; Procter letters to A. E. Ebert, Chicago; Maisch letters to M. I. Wilbert, Philadelphia; Rice letters to Miss Adelaide Rudolph, Case Library, Caxton Building, Cleveland, O.

SOCIETIES OF WOMEN PHARMACISTS.—During the early part of the year the Woman's Pharmaceutical Association was organized in Chicago with the following officers: President, Miss Nina C. Piper; Vice-Presidents, Miss Julia Runkel, Miss Jean Gordon; Secretary and Treasurer, Miss Charlotte Stimson; Committee on Membership, Misses Mary Walker, Amanda W. Stahl, Olive Pierce. This organization aims to be national or even international in its scope.

A month or so ago the "Society of Women Pharmacists and Chemists of Pennsylvania" was organized here in Philadelphia with officers as follows: Honorary President, Susan Hayhurst, M.D., Ph.G.; President, Susannah G. Haydock, Ph.G.; Vice-President, Bertha L. DeGraffe-Peacock, Ph.G.; Secretary-Treasurer, Mabelle Haydock, P.D., B.P. While not the first woman to engage in the practice of pharmacy in the United States, Dr. Hayhurst is held in grateful esteem by a large number of women pharmacists, to whom she has given an opportunity of obtaining practical experience in the Dispensary at the Woman's Hospital.

THE PHARMACEUTICAL EXAMINING BOARD of Pennsylvania have arranged for a practical laboratory examination to be given in addition to the usual written one on January 16, 1904.

They have been enabled through the courtesy of the Board of Trustees of the Philadelphia College of Pharmacy to secure the use of the Pharmaceutical Laboratory for the practical work in the morning of the date set, as well as the class-rooms for the written examination to be held in the afternoon of the same date.

The laboratory work will consist of prescriptions to be prepared by each applicant and is arranged for applicants for the certificate of *Registered Pharmacist* only, the applicants for Q. A. certificates will receive the usual written examination to be held in the afternoon.

Those intending to come before the Board for the Registered Pharmacist certificate should apply to the Secretary, Dr. Charles T. George, Harrisburg, Pa., at least ten days previous, to receive a blank and assignment of time for the laboratory work.

JAMES T. SHINN, Treasurer of the Philadelphia College of Pharmacy, has for a number of years been interested in educational and philanthropic work in this city. He is chairman of the committee of management of Association Local Centre of the American Society for the Extension of University Teaching. This year the Society has the co-operation of the Free Library of Philadelphia, and, in addition to the lectures at the Local Centre, sixty lectures will be delivered at the various branches of the Library. In addition to this, Mr. John Thompson, the Librarian, has had copies of the books especially recommended for reading in connection with the lectures, placed in the reference-room of the Library, at 1217 Chestnut Street, and also in the various branches of the Library in different parts of the city.

Besides being a member of a number of other organizations, Mr. Shinn holds the following offices: President of the Board of Managers of the Society for the Employment and Instruction of the Poor; Secretary of the Pennsylvania Hospital; President of the Vacant Lots Cultivation Society; Vice-President of the Fuel Savings Society.

OTTO A. WALL, Professor of Materia Medica and Pharmacognosy, in the St. Louis College of Pharmacy, was the recipient, on November 14th, of a testimonial commemorating the completion by him of thirty consecutive years of work as a teacher in that institution. The form of testimonial chosen was that of a life-size bronze medallion of Dr. Wall, and the exercises connected with its presentation to the college were held in the Materia Medica Lecture Hall. A duplicate medallion was presented to Dr. Wall's family. The dedication ceremonies were followed by a banquet.

C. S. N. HALLBERG, Professor of Pharmacy in the Chicago College of Pharmacy, delivered an interesting address on "Some Ancient Pharmacists" at the opening exercises of the St. Louis College of Pharmacy, which has been published in recent numbers of *Meyer Brothers' Druggist* and the *Western Druggist*.

J. B. NAGELVOORT has accepted the position of chemist for the Missouri Botanical Garden. Professor Nagelvoort is well known for his researches in phyto-chemistry, and we congratulate him on being so fortunate as to have the facilities of the Shaw Gardens at his disposal.

CHARLES F. CHANDLER, of Columbia University, delivered a lecture illustrated with specimens and diagrams, at the American Philosophical Society on November 7th, on "The Electro-Chemical Industries of Niagara Falls," which was, in fact, a summary of the most remarkable achievements in electrical chemistry of the past twenty-five years, all of which are due to the inventive research of young Americans.